What is claimed is:

1. A system for reducing pollution components from a combustion process, said system comprising:

at least one burner modified in such a way so as to minimize production of at least one pollution component;

an over fire air system which injects secondary air above said at least one burner;

a tempering system which injects a cooling fluid into a combustion zone of said at least one burner so that the fluid is entrained to intersect an identifiable high pollutant component producing zone;

a selective non-catalytic reduction system which injects a reagent into flue gases produced by said at least one burner; and

a targeted chemical injection system which injects a pollutant component reducing agent into a nearby turbulent combustion zone of said at least one burner without a destruction of the agent by high temperatures, thus enabling the agent to be widely dispersed by the nearby turbulent zone before reaching a more distal zone where more favorable conditions for pollutant component reduction by the agent prevail.

2. The system of Claim 1 wherein the pollutant component comprises NOx.

3. The system of Claim 1 wherein said at least one burner is modified by employing a technique selected from the group consisting of a distribution analysis technique, a fuel balancing technique, a computational fluid dynamics combustion modeling technique, a flame stabilization technique, and combinations of these.

4. The system of Claim 3 wherein the air distribution analysis technique comprises using actual data taken from burners in order balance secondary air between burners.

5. The system of Claim 3 wherein the flame stabilization technique comprises a flame stabilizer which radially and circumferentially stages secondary air zone of burners to reduce pollutant component emissions.

6. The system of Claim 1 wherein said over fire air system is adapted to inject air at a velocity selected so as to substantially complete combustion of uncombusted fuel.

7. The system of Claim 1 wherein about 70% to about 90% of combustion air comprises primary air mixed with fuel being combusted and about 10% to about 30% of combustion air comprises secondary air injected by said over fire air system.

8. The system of Claim 1 wherein the cooling fluid injected by said tempering system comprises water, a gas or a mixture of water and gas.

9. The system of Claim 1 wherein the cooling fluid injected by said tempering system has a combined mass flow and temperature which is sufficiently low so that the cooling fluid reaches the pollutant component producing zone and cools it to a temperature where production of the pollutant component is reduced.

10. The system of Claim 1 wherein the reagent injected by said selective non-catalytic reduction system is injected into an area where the flue gases have a temperature in a range between about 1,500 °F and about 2,100 °F.

11. The system of Claim 10 wherein the reagent injected by said selective non-catalytic reduction system is injected into an area where the flue gases have a temperature in a range between about 1,920 °F and about 2,100 °F.

12. The system of Claim 1 wherein the pollutant component reducing agent injected by said targeted chemical injection system is encapsulated within liquid or aqueous droplets that are so sized as to survive transit through the nearby turbulent combustion zone while evaporating by the time the agent reaches the more distal zone.

13. A system for reducing NOx from a combustion process, said system comprising:

at least one burner modified by employing a technique selected from the group consisting of a distribution analysis technique, a fuel balancing technique, a computational fluid dynamics combustion modeling technique, a flame stabilization technique, and combinations of these, so as to minimize production of NOx;

an over fire air system which injects secondary air above said at least one burner at a velocity selected so as to substantially complete combustion of uncombusted fuel;

a tempering system which injects a cooling fluid into a combustion zone of said at least one burner so that the fluid is entrained to intersect an identifiable NOx producing zone, the cooling fluid having a combined mass flow and temperature which is sufficiently low so that the cooling fluid reaches the NOx producing zone and cools it to a temperature where production of NOx is reduced;

a selective non-catalytic reduction system which injects a reagent into flue gases produced by said at least one burner in an area where the flue gases have a temperature in a range between about 1,500 °F and about 2,100 °F; and

a targeted chemical injection system which injects a NOx reducing agent into a nearby turbulent combustion zone of said at least one burner without a destruction of the agent by high temperatures, thus enabling the agent to be widely dispersed by the nearby turbulent zone before reaching a more distal zone where more favorable conditions for NOx reduction by the agent prevail.

14. The system of Claim 13 wherein the air distribution analysis technique comprises using actual data taken from burners in order balance secondary air between burners.

15. The system of Claim 13 wherein the flame stabilization technique comprises a flame stabilizer which radially and circumferentially stages secondary air zone of burners to reduce NOx emissions.

16. The system of Claim 13 wherein about 70% to about 90% of combustion air comprises primary air mixed with fuel being combusted and about 10% to about 30% of combustion air comprises secondary air injected by said over fire air system.

17. The system of Claim 13 wherein the cooling fluid injected by said tempering system comprises water, a gas or a mixture of water and gas.

18. The system of Claim 13 wherein the reagent injected by said selective non-catalytic reduction system is injected into an area where the flue gases have a temperature in a range between about 1,920 °F and about 2,100 °F.

19. The system of Claim 13 wherein the NOx reducing agent injected by said targeted chemical injection system is encapsulated within liquid or aqueous droplets that are so sized as to survive transit through the nearby turbulent combustion zone while evaporating by the time the agent reaches the more distal zone.

20. A system for reducing NOx from a combustion process, said system comprising:

at least one burner modified by employing a technique selected from the group consisting of a distribution analysis technique, a fuel balancing technique, a computational fluid dynamics combustion modeling technique, a flame stabilization technique, and combinations of these, so as to minimize production of NOx;

an over fire air system which injects secondary air above said at least one burner at a velocity selected so as to substantially complete combustion of uncombusted fuel; and

a tempering system which injects a cooling fluid into a combustion zone of said at least one burner so that the fluid is entrained to intersect an identifiable NOx producing zone, the cooling fluid having a combined mass flow and temperature which is sufficiently low so that the cooling fluid reaches the NOx producing zone and cools it to a temperature where production of NOx is reduced.

21. The system of Claim 20 wherein the air distribution analysis technique comprises using actual data taken from burners in order balance secondary air between burners.

22. The system of Claim 20 wherein the flame stabilization technique comprises a flame stabilizer which radially and circumferentially stages secondary air zone of burners to reduce NOx emissions.

23. The system of Claim 20 wherein about 70% to about 90% of combustion air comprises primary air mixed with fuel being combusted and about 10% to about 30% of combustion air comprises secondary air injected by said over fire air system.

24. The system of Claim 20 wherein the cooling fluid injected by said tempering system comprises water, a gas or a mixture of water and gas.

25. A method for reducing pollution components from a combustion process, said method comprising the steps of:

modifying at least one burner in such a way so as to minimize production of at least one pollution component;

injecting secondary air above the at least one burner;

injecting a cooling fluid into a combustion zone of the at least one burner so that the fluid is entrained to intersect an identifiable high pollutant component producing zone;

injecting a reagent into flue gases produced by the at least one burner; and

injecting a pollutant component reducing agent into a nearby turbulent combustion zone of the at least one burner without a destruction of the agent by high temperatures, thus enabling the agent to be widely dispersed by the nearby turbulent zone before reaching a more distal zone where more favorable conditions for pollutant component reduction by the agent prevail.

26. The method of Claim 25 wherein the pollutant component comprises NOx.

27. The method of Claim 25 wherein said modifying step comprises the step of modifying at least one burner by employing a technique selected from the group consisting of a distribution analysis technique, a fuel balancing technique, a computational fluid dynamics combustion modeling technique, a flame stabilization technique, and combinations of these so as to minimize production of at least one pollution component.

28. The method of Claim 27 wherein the air distribution analysis technique comprises the step of using actual data taken from burners in order balance secondary air between burners.

29. The method of Claim 27 wherein the flame stabilization technique comprises the step of radially and circumferentially staging a secondary air zone of burners to reduce pollutant component emissions.

30. The method of Claim 25 wherein said injecting secondary air step comprises the step of injecting air at a velocity selected so as to substantially complete combustion of uncombusted fuel.

31. The method of Claim 25 wherein about 70% to about 90% of combustion air comprises primary air mixed with fuel being combusted and about 10% to about

30% of combustion air comprises secondary air injected above the at least one burner.

32. The method of Claim 25 wherein said injecting a cooling fluid step comprises the step of injecting water, a gas or a mixture of water and gas.

33. The method of Claim 25 wherein said injecting a cooling fluid step comprises the step of injecting a cooling fluid having a combined mass flow and temperature which is sufficiently low so that the cooling fluid reaches the pollutant component producing zone and cools it to a temperature where production of the pollutant component is reduced.

34. The method of Claim 25 wherein said injecting a reagent step comprises the step of injecting a reagent into an area where the flue gases have a temperature in a range between about 1,500 °F and about 2,100 °F.

35. The method of Claim 34 wherein said injecting a reagent step comprises the step of injecting a reagent into an area where the flue gases have a temperature in a range between about 1,920 °F and about 2,100 °F.

36. The method of Claim 25 wherein said injecting a pollutant component reducing agent step comprises the step of encapsulating the pollutant component reducing agent within liquid or aqueous droplets that are so sized as to survive

transit through the nearby turbulent combustion zone while evaporating by the time the agent reaches the more distal zone.

37. A method for reducing NOx from a combustion process, said method comprising the steps of:

modifying at least one burner by employing a technique selected from the group consisting of a distribution analysis technique, a fuel balancing technique, a computational fluid dynamics combustion modeling technique, a flame stabilization technique, and combinations of these, so as to minimize production of NOx;

injecting secondary air above the at least one burner at a velocity selected so as to substantially complete combustion of uncombusted fuel;

injecting a cooling fluid into a combustion zone of the at least one burner so that the fluid is entrained to intersect an identifiable NOx producing zone, the cooling fluid having a combined mass flow and temperature which is sufficiently low so that the cooling fluid reaches the NOx producing zone and cools it to a temperature where production of NOx is reduced;

injecting a reagent into flue gases produced by the at least one burner in an area where the flue gases have a temperature in a range between about 1,500 °F and about 2,100 °F; and

injecting a NOx reducing agent into a nearby turbulent combustion zone of the at least one burner without a destruction of the agent by high temperatures, thus enabling the agent to be widely dispersed by the nearby turbulent zone before

reaching a more distal zone where more favorable conditions for NOx reduction by the agent prevail.

38. The method of Claim 37 wherein the air distribution analysis technique comprises the step of using actual data taken from burners in order balance secondary air between burners.

39. The method of Claim 37 wherein the flame stabilization technique comprises the step of radially and circumferentially staging a secondary air zone of burners to reduce pollutant component emissions.

40. The method of Claim 37 wherein about 70% to about 90% of combustion air comprises primary air mixed with fuel being combusted and about 10% to about 30% of combustion air comprises secondary air injected above the at least one burner.

41. The method of Claim 37 wherein said injecting a cooling fluid step comprises the step of injecting water, a gas or a mixture of water and gas.

42. The method of Claim 37 wherein said injecting a reagent step comprises the step of injecting a reagent into an area where the flue gases have a temperature in a range between about 1,920 °F and about 2,100 °F.

43. The method of Claim 37 wherein said injecting a pollutant component reducing agent step comprises the step of encapsulating the pollutant component reducing agent within liquid or aqueous droplets that are so sized as to survive transit through the nearby turbulent combustion zone while evaporating by the time the agent reaches the more distal zone.

44. A method for reducing NOx from a combustion process, said method comprising the steps of:

modifying at least one burner by employing a technique selected from the group consisting of a distribution analysis technique, a fuel balancing technique, a computational fluid dynamics combustion modeling technique, a flame stabilization technique, and combinations of these, so as to minimize production of NOx;

injecting secondary air above the at least one burner at a velocity selected so as to substantially complete combustion of uncombusted fuel; and

injecting a cooling fluid into a combustion zone of the at least one burner so that the fluid is entrained to intersect an identifiable NOx producing zone, the cooling fluid having a combined mass flow and temperature which is sufficiently low so that the cooling fluid reaches the NOx producing zone and cools it to a temperature where production of NOx is reduced.

45. The method of Claim 44 wherein the air distribution analysis technique comprises the step of using actual data taken from burners in order balance secondary air between burners.

46. The method of Claim 44 wherein the flame stabilization technique comprises the step of radially and circumferentially staging a secondary air zone of burners to reduce pollutant component emissions.

47. The method of Claim 44 wherein about 70% to about 90% of combustion air comprises primary air mixed with fuel being combusted and about 10% to about 30% of combustion air comprises secondary air injected above the at least one burner.

48. The method of Claim 44 wherein said injecting a cooling fluid step comprises the step of injecting water, a gas or a mixture of water and gas.